

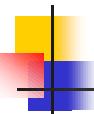
Environmental Quality Service Council

Water Quality Issues September 3, 2003



Water Quality Issues - Overview

- Clean Water Act
- Safe Drinking Water Act
- Indiana Groundwater Protection Act
- Attain/Maintain Surface Water Quality Standards
- Protect Groundwater Resource for Drinking Water and other beneficial uses



Water Quality Issues

- Assistance to local units of government for their wastewater treatment and "non-point" source needs
 - State Revolving Loan Fund
- Challenges for residential and small community wastewater treatment
 - State's Groundwater Quality Standards
 - ISDH's On-Site Wastewater Treatment Rules
 - Indiana Rural Wastewater Task Force
 - Allen County General Permit Rule



Water Quality Issues

- Impairments to Indiana's Surface Water
 - Update to 303(d) List of Impaired Water Bodies
- Changes to Surface Water Quality Standards
 - Triennial Review
- Stormwater Management
 - Federal Phase II Program Rules 5, 6 and 13
- Confined Feeding
 - CAFO General Permit Rule



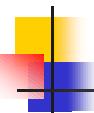
Water Quality Issues

- Combined Sewer Overflows
 - CSO Community Notification Rule
- Update on 2003 Legislation
 - HEA 1671 Permit Renewals
 - HEA 1221 NPDES Variances



SRF Program Management

- Jim McGoff, Executive Director
- Marylou Renshaw, Manager of Technical Review
- Rich Emery, Financial Resource Manager
- Matt Martin, Finance Manager



SRF Program Enhancements

- Statute says SRF Program managed by:
 - Indiana Department of Environmental Management and
 - State Budget Agency
- Joint administration







- May 2003, Executive Director
- SRF now operates as one entity with one face





SRF Program Goals

- Provide below-market-interest-rate loans to Indiana communities to finance wastewater and drinking water infrastructure projects.
- Implement Nonpoint Source project financing
- Evaluate process
- Evaluate capacity

Questions?

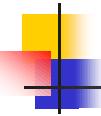
jmcgoff@dem.state.in.us (317) 233-6957 or (317) 234-2916



Residential and Community Wastewater Treatment Systems

- Groundwater Quality Standards
- ISDH and County Health Department Regulation of Residential/Commercial Wastewater Treatment Systems
- Indiana Rural Wastewater Task Force
- Allen County General Permit Rule

Groundwater Quality Standards



Groundwater Quality Standards

- Adopted by the Water Pollution Control Board on August 8, 2001
- Effective in March 2002



Groundwater Quality Standards Background

In 1989, Legislature passed Groundwater Protection Act

- The Act set goals and filled in gaps in the State's approach for protecting groundwater:
 - uniform statewide science based standards
 - uniform statewide groundwater classification and management system

- Water Pollution Control Board shall adopt standards, IC 13-18-17-5
- Agencies must adopt rules to apply the standards to activities they regulate
 - IDEM
 - ISDH
 - DNR
 - OSC
 - OSFM
- Standards must include:
 - Numeric and narrative criteria
 - Classification System
 - Method for Applying Standards

- Standards must allow ground water remediations consistent with the objectives in IC 13-25-5-8.5
- The agencies shall use the standards for the following:
 - Establish minimum compliance levels for ground water monitoring at regulated facilities
 - Ban the discharge of effluent to potable ground water
 - Establish health protective goals for untreated ground water used as drinking water
 - Establish concentration limits for ambient ground water



- Does not authorize an immediate system to regulate any person who may contribute to an increase in ground water concentration
- Does not override State's ground water remediation statutes and policies



- Is to be implemented in the future through 5 Agencies' rulemakings
- Is not analogous to surface water or air quality standards
 - no national standards
 - no consistent approach from state to state
 - no consistent approach across programs or agencies



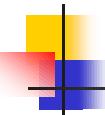
Rule Making Process

- Ground Water Task Force
 - Topic at 20 Task Force meetings since 1997
 - Subgroups of GWTF (Large and Small Workgroups) - activity since 1997:
 - 15-50 Stakeholders
 - Over 40 Public Meetings
 - Discussion of key issues
 - Development of rule language
 - Individual meetings with interested persons
 - Discussion of key issues
- Comment Periods and Hearings



Rule Making Process

- Reviewed groundwater standards adopted by other states - especially Midwestern states
- Standards based on US EPA Drinking Water Maximum Contaminant Level (MCL)



Key Elements of the Standards

- Applicability
- Classification System
- Criteria
- Ground Water Management Zone

Applicability

- Clarifies that standards, consistent with statute, are not immediately enforceable except at wells
- Provides direction to the 5 agencies when adopting rules
 - The 5 agencies must minimize or eliminate to the extent feasible adverse impacts to ground water
- Numeric and narrative standards apply at all public/private wells immediately

Classification System

- 3 Classes of Groundwater
 - Drinking Water
 - Limited
 - Impaired Drinking Water
- Drinking Water is the default classification
- Rule classifies some groundwater as limited (coal mining, agriculture and natural gas)
- Commissioner of IDEM <u>may</u> designate as Impaired or Limited based on a request



Criteria

Narrative - protect existing use

Numeric

- MCLs for Drinking Water Class
- Existing contaminate concentration for limited class, coal and agriculture, <u>if</u> the contaminant is attributable to the activity, others MCLs
- 10X the MCL for groundwater "designated" as Limited Class
- Existing concentration for those contaminants which "impair" the water - Impaired Class, others MCL



Ground Water Management Zone

- 3 dimensional region around an activity within which the Standards do not apply
- Preferably established by each program
- Default zone in the rule if program does not establish a GWMZ



Effect of the Standards:

- Immediately set enforceable numeric and narrative standards for public/private drinking water wells and other beneficial use wells
- Provides direction to the 5 agencies on standards for incorporation into subsequent rule makings
- Requires agencies to "eliminate or minimize" to the extent feasible adverse impacts to ground water

Use Of The Standards

Examples of activities where the standards will be used:

- Well Investigations
- Septic Systems
- Coal Mining
- Surface Impoundments
- Pesticide/Fertilizer Application
- Landfills
- Land Application
- Constructed Wetlands



Implementation of the Groundwater Standards

- Ground Water Task Force providing direction and input
- IDEM is reviewing programs that protect groundwater - updates necessary based on the Standards
- IDEM is working with other agencies that are updating rules based on the Standards:
 - IDNR coal mining
 - ISDH septics

Nitrates in Ground Water

- Concern methemoglobinemia (blue-baby syndrome)
 - interference with the uptake of oxygen
 - affects humans and livestock
- Federal health protective Drinking Water MCL -10 mg/l
- Sources
 - fertilizers
 - manure
 - industrial waste
 - septic systems

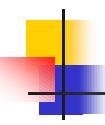
Nitrates in Ground Water

- USGS study in White River Basin 92 monitoring sites - shallow wells
 - 6% nitrate greater than 10 mg/l
 - 29% nitrate greater than 3 mg/l (human induced)
 - 42 % showed no nitrate
- Highest concentrations found in sandy, permeable deposits



How Groundwater Standards Influence the Septic Rule

- Assume that groundwater to be protected is drinking water class - nitrate concentration below 10 mg/l
- Design of the septic system must:
 - protect current and future use of groundwater
 - contaminant attributable to human activity can't increase in a drinking water well
 - prevent the nitrate concentration from exceeding 10 mg/l off-site



Indiana State Department of Health On-Site Wastewater Treatment Rules

- Changes to ISDH Rules
- Process to Date
- Next Steps
- Key Issues

ILRC Rural Wastewater Task Force

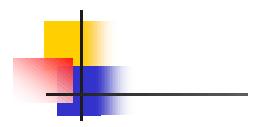


Status Report to Environmental Quality Service Council

September 3, 2003

Indiana Overview of Onsite Systems

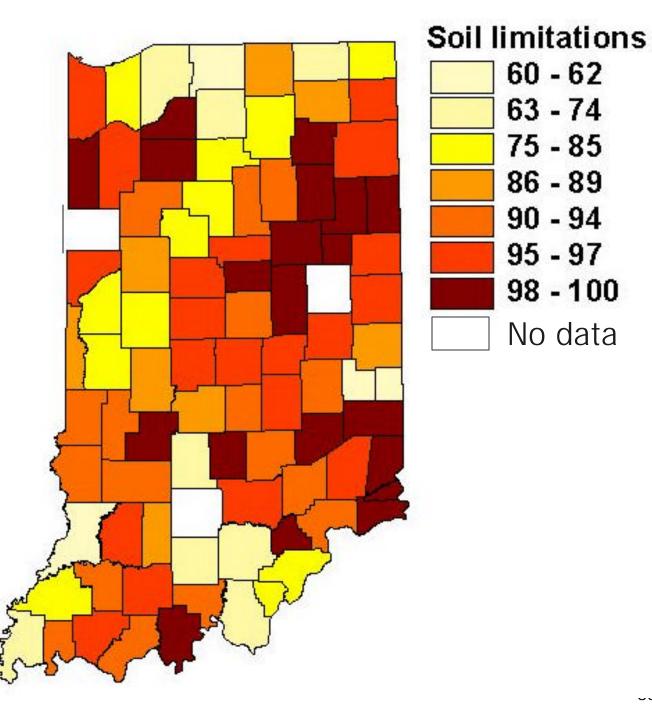
- ~ 800,000 households utilize a septic system
- ~ 15,000 on-site wastewater disposal permits are approved annually
- County sanitarians estimate failure rates as high as
 70 percent
- ~ 200,000 systems are operating inadequately
- C. Taylor, J. Yahner, and D. Jones. 1997. An evaluation of onsite technology in Indiana. Purdue University, West Lafayette, IN.



Severe limitations for traditional septic systems by county (percentage

based on NRCS

criteria)



60 - 62

63 - 74

75 - 85

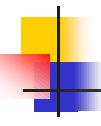
86 - 89

90 - 94

95 - 97

98 - 100

No data



Task Force Membership

Alliance of Indiana Rural Water	IN Development Finance Authority
American Council of Engineering Companies	IN Farm Bureau, Inc.
Association of Indiana Counties	IN Geological Survey
County - Allen County Health Dept.	IN Land Resources Council
County - Dearborn County Health Dept.	IN Land Use Consortium
County - Hendricks County Health Dept.	IN Onsite Wastewater Professionals
County - LaGrange County Health Dept.	IN Planning Association
Hoosier Environmental Council	IN Rural Development Council (EIWG)
IN Association of Cities & Towns	IN Rural Health Association
IN Association of Realtors	IN State Dept. of Health
IN Beef Cattle Association	Indiana Capacity Center
IN Builders Association	
IN Dept. of Environmental Management	Office of the Commissioner of Ag.
IN Dept. of Environmental Management / SRF	Purdue University/Agronomy
IN Dept. of Natural Resources/Soil Conservation	Purdue University/Community Devleopment
IN Dept. of Natural Resources/Water	Rural Community Assistance Program

Working Goal

- Develop a comprehensive state-level strategy for the long-term, environmentally-sound and cost-effective treatment of rural wastewater. Such a strategy would:
 - Support a menu of treatment options, including traditional septics, alternative onsite systems and centralized wastewater treatment, to address existing system failures AND new development.
 - Support thoughtful long-term, environmentallysound and cost-effective decisions about wastewater treatment at the local level that support community goals.



EPA's Life Cycle Elements

- Public education and participation
- Planning
- Recordkeeping, inventory, and reporting
- Site evaluation, design, and construction
- Financial assistance and funding

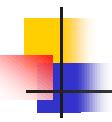
- Training and certification
- Residuals management
- Permitting, inspections and monitoring
- Corrective actions
- Performance
- Operation and maintenance



- January: Indiana Land Resources Council established rural wastewater policy as a priority
- April: 1st Meeting of Task Force / SWOT
- May to August: Monthly meetings focused on topics, including
 - problem identification
 - alternative technologies
 - operations and maintenance
 - professional standards

Process (2)

- May to August (cont.):
 - Funding
 - Local planning
 - Technologies research
 - Residual Management
- Early September: General Recommendations and Priorities
- September to November: Develop Action Plans with Subgroups
- Late November: Present Recommendations to ILRC



Preliminary Observations

Issue Is Complex - Successful Solutions Will Require a comprehensive approach that includes:

- Developing a systematic inventory/tracking system
- Providing state and local agencies additional resources
- Recognizing that current financial assistance is still too expensive for many small unincorporated communities and addressing by providing cheaper technology, re-establishing grant funding, and possibly more favorable loans terms

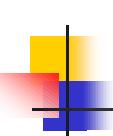
Preliminary Observations (cont.)

- Reducing the regulatory barriers to alternative on-site systems
- Developing education programs for decisionmakers and professionals
- Establishing professional standards
- Encouraging local decision-makers to institutionalize operation and maintenance
- Creating a standing body to coordinate activities and oversee a systematic research function



Allen County NPDES General Permit for On-Site Residential Sewage Discharging Disposal Systems

- SEA 461-2002 required:
 - IDEM to develop a NPDES general permit for residential sewage discharging disposal systems in Allen County
 - The formation of a county on-site waste management district in Allen County.



Allen County NPDES General Permit for On-Site Residential Sewage Discharging Disposal Systems (cont'd)

- Allen County is located in an area with primarily moraine soils, which are not well suited for traditional septic systems.
- Allen County has many systems currently in place that are failing, with relatively few alternatives available to homeowners
- Discharging residential on-site wastewater treatment systems are currently prohibited by IDEM and ISDH rules across the state



Allen County NPDES General Permit for On-Site Residential Sewage Discharging Disposal Systems (cont'd)

- Since April 2002, IDEM worked with U.S. EPA and Allen Co. and others on a rule
- Water Pollution Control Board adopted the NPDES general permit rule (327 IAC 15-14) on August 7, 2003. It should become effective in November 2003.
- 327 IAC 15-14 requires:
 - Any discharge from on-site sewage discharging disposal systems must meet water surface quality standards.
 - Monthly visual inspection and monitoring
 - Specific effluent limitations
 - Confirmation tests if monitoring shows an exceedance of any parameter
 - Compliance plan for any system out of compliance
- Owner of a system must get an operating permit from the Allen County health department before operating the system.
- The owner must submit a notice of intent to be covered by the general permit rule and a copy of the operating permit to the District before a discharge from the system is allowed.
- The District is required to submit the notice of intent information to IDEM as well as maintain records on the systems.



Next Steps

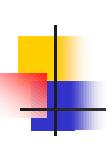
- IDEM will develop the monitoring forms
- IDEM will work closely with EPA and Allen County to assure that these systems meet water quality standards.



Residential and Community Wastewater Treatment Systems

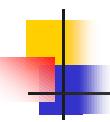
IDEM Work on Alternative Systems

- Rules and statutes require ISDH to permit on-site subsurface discharging systems for <u>residential and commercial</u> developments.
- IDEM is required to permit on-site subsurface discharging systems systems proposed by <u>public</u> entities.
- IDEM does not have specific rules governing alternative systems
- IDEM and ISDH are working together to arrive at comparable standards and approaches for alternative private and public systems. These may be implemented through existing authorities and policy or by rule change. Discussions involve:
 - Application Requirements
 - Criteria used to evaluate proposed systems
 - Operation and Maintenance requirements
 - Monitoring requirements



Changes to Surface Water Quality Standards

- Triennial Review Process
 - Steering Committee meets quarterly
 - Individual Workgroups
- Triennial Review Workgroups
 - Mercury/Variances
 - Antidegradation/Outstanding State Resource Water
 - E-Coli
 - "Fast Track"
- Next Steps
 - Outstanding State Resource Waters
 - Other "Slower Track" WQ Critieria/Standard Issues



Indiana's Storm Water Rules

327 IAC 15-5 Construction Activities

327 IAC 15-6 Industrial Activities

 327 IAC 15-13 Municipal Separate Storm System (MS4) Entities



- Two Phased Federally Mandated
 Program
- Phase I Federal Requirements
 - Construction activities that disturb 5 or more acres regulated.
 - Industrial activities regulated based on type of industry and potential for pollutant exposure.
 - Municipal activities regulated based on population served above 100,000 people,





- Phase II Federal Requirements
 - Provides "no exposure exclusion" for industrial activities
 - Regulates construction activities greater than 1 acre
 - Addresses Urbanized Areas at or near 10,000 people or more



- Storm Water Associated with Construction: Rule 5
- Notice of Intent (NOI) submitted every 5 years
- Construction Plan: Includes project description and layout, grading plan, drainage plan, storm water pollution prevention plan, and postconstruction plan



- Storm Water Associated with Industrial Activity: Rule 6
 - Covers only certain industries <u>with</u> <u>exposure</u>
 - Notice of Intent (NOI) submitted every 5 years
 - Pollution Prevention Plan (SWP3) developed within 1 year of NOI submittal
 - Annual Grab Sampling

- MS4 Entities and Storm Water: Rule 13
- NOI and SWQMP-Initial Application
 - Within 90 days after rule's effective date; or
 - Within 1 year after written notification
- SWQMP-Baseline Characterization and Report
 - Within 6 months after NOI submittal
- SWQMP-Program Implementation
 - Within 1 year after NOI submittal
- Annual/Monthly Reporting

Storm Water Management

327 IAC 5, 6 and 13



- RULE 13
 - March 12, 2003 Final Adoption
 - August 6, 2003 Rule Became Effective
 - November 4, 2003 NOI Letters Due
- RULES 5 & 6
 - May 8, 2003 Final Adoption
 - Nov/Dec 2003 Rule Revisions Become Effective

Next Steps

RULE 13

- Meeting with county surveyors and IAC on Sept. 2 to discuss timing & funding issues
- Outreach workshops
- Finalize Guidance Document

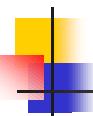
RULES 5 & 6

- Promulgation of final adopted Rule
- Notify permit holders/Phase in NOI resubmittals



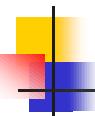
CAFO General Permit Rule

- Indiana has 2500 Confined Feeding Operations that have state
 Confined Feeding Operation (CFO) approvals
- Indiana has about 500 CFOs that meet the federal definition of Concentrated Animal Feeding Operations (CAFO), including those that do not meet the definition by 'numbers' but have had a discharge
- The Water Pollution Control Board adopted 327 IAC 16 in 2001 to govern design, construction, operation of all CFOs in the state
- Indiana has believed and argued to U.S. EPA, that the state program is functionally equivalent to the federal program



CAFO General Permit Rule

- U.S. District Court for Southern Indiana has ordered Indiana to require NPDES permits for CAFOs by May 14, 2003
- U.S. EPA published new effluent guidelines for CAFOs on February 14, 2003, (effective April 14) that require NPDES permits for CAFOs
- IDEM has issued 1 individual NPDES permit and proposed 17 for facilities with discharges since January 2000. In addition there are 24 applications awaiting review.
- IDEM did mass mailings on April 22, 2003 and July 24, 2003 notifying CAFOs of their need to apply for a NPDES permit



Response to Mass Mailing

- Original List Notified: 529 farms
- **Voidances:** 4 farms closed, never built, or went below CFO numbers
- **Submitted NOI**: 204 farms
- Submitted Individual NPDES Application: 38 farms
- **Exemption**: 149 farms
- **Dispute they had a Discharge**: 8 farms
- **Notification:** 45 farms decreased animal numbers below CAFO thresholds.
- **No Response:** 135 farms included in the IDEM mailings that have not yet responded.



CAFO General Permit Rule Process

- March 1, 2001: First Notice of Rulemaking
- February 1, 2003: Second Notice of Rulemaking
- Meetings in 2003 with:
 - U.S. EPA, Region 5
 - IDEM Workgroup including: citizen groups, agriculture industry representatives, Purdue, NRCS and others
- May 8, 2003: Water Board preliminary adopts General NPDES Rule and Emergency Rule
- August 7, 2003: Water Board readopts Emergency Rulé¹



Key Issues

- Requirement for IDEM approval of new CAFOs (and modified)
- Public participation in general permits
- Individual permits versus general permits; Decision Criteria
- Incorporating EPA Requirements Relative to:
 - Prohibition of Application to Frozen Ground
 - Prediction of Rainfall Events
 - Monitoring of Drain Tiles



Next Steps

- Revise Draft Rule to address key issues and send to Interested Parties
- Meet with Interested Parties on September 19 and October 3, 2003 to discuss draft rule
- Final Adopt Rule at November Water Board Meeting

Indiana's 2004 303(d) List of Impaired Waters

Integrated Report Listing Categories

305 (b)

Report

- 1. Attaining standards for all designated uses
- 2. Attaining some designated uses, and insufficient or no data and information to determine if remaining use are attained
- Insufficient or no data and information to determine if any designated use is attained
- Impaired or threatened for one or more designated uses but not needing a TMDL
 - a. TMDL has been completed
 - b. Other pollution control requirements will suffice
 - c. Not impaired by a pollutant
 - 5. Impaired or threatened by pollutant(s) for one or more designated uses and requiring a TMDL

303(d) List

Basic Outline of Listing Process

Water Quality Assessments

Water-Quality Assessment Methodology

Impairment Determination

303(d) Listing Methodology

303(d) List

TMDLs are Necessary for all Waters on a States 303(d) List

What is the 303(d) List?

A list of Impaired Waterbodies Needing a TMDL as Required by the Federal Clean Water Act

How do you Define "Impaired"?

Waterbodies Which Do not Meet the State's Water Quality Criteria for One or More Designated Uses

Sources Used for Assessments*

- IDEM Assessment Programs
- Other State and Federal Agencies/Programs
- Academia
- For Profit and Non-Profit Environmental Groups
- Other Public and Private Entities

Summary of Parameters



428 waterbodies listed. There were 208 on the 1998 303(d) list.

	Number of
Parameter	Impairments
Impaired Biotic Communities	
Total Dissolved Solids	

2004 303(d)

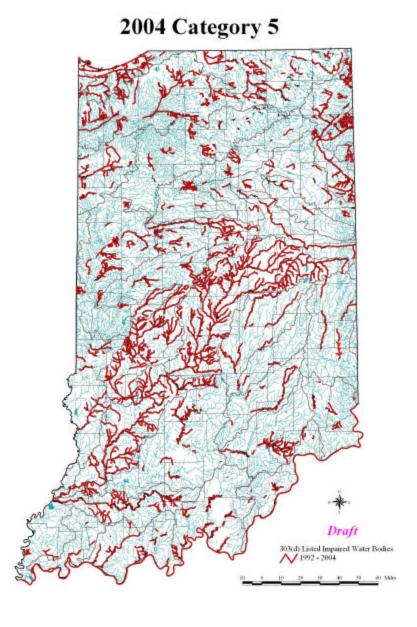
377 waterbodies listed. There were 428 on the 2002 303(d) list.

Summary of Parameters

	Number of
Parameter Parame	Impairments
E. coli	214
Impaired Biotic Communities	
Total Dissolved Solids	

Proposed 2004 303(d) List

377
Waterbodies
listed. There
were 428 on
the 2002
303(d) list.



Proposed Change: Move Fish Consumption Advisory Impairments to Category 4(b) on the Consolidated List

- Category 4B includes waterbodies that are impaired or threatened for one or more designated uses but does not require the development of a TMDL because other pollution control requirements are reasonably expected to result in the attainment of the water quality standard in the future.
- FCAs for mercury, PCBs or pesticides do not constitute a violation of any listed water quality criteria for either pollutant.
- The reduction of mercury, PCBs or pesticides in fish tissue will depend on other long term control measures, air reductions, sediment remediation etc.
- In the draft 2004 303(d) list, IDEM proposes to move 168 waterbodies from Category 5 to Category 4B for specific parameters
- EPA has not yet agreed to move of FCA waterbodies to Category4B



Proposed Change: Delist Waterbodies from Category 5 Based on New Information

- IDEM proposes to remove 11 waterbodies due to new information received since the development of the draft 2002 303(d) list. This information includes:
 - new data that supports delisting;
 - awareness that a waterbody was previously incorrectly listed in Category 5 based on the listing methodology; and
 - the recognition that a waterbody should more appropriately be listed or combined with another waterbody



Proposed Change: Add Waterbodies to Category 5 Based on New Data

- For a stream to be listed it must have been sampled and the data collected must support 303(d) listing.
- The 76 waterbodies proposed to be added to the 2004 303(d) list are primarily in the West Fork White River and Patoka River basins
- These basins were sampled in the summer of 2001.
- The samples were subsequently analyzed and indicate waterbody impairment.



Next Steps for Finalizing the 2004 303(d) List

- Public Notice the Draft List in the October 1, 2003 Indiana Register
- 90 Day Comment Period ends December 29, 2003
- 2 Public meetings to be held before December 29, 2003:
 Indianapolis and the West Fork White River and Patoka River Area
- Summarize and Respond to Comments received
- Revise list as appropriate based on comments
- Prepare list for submission to USEPA by April 2004



- Reason for rulemaking
- Rulemaking was undertaken due to the passage of SEA 431 in 2000.
- Law required the Water Pollution Control Board to adopt a rule to establish requirements for community notification by NPDES permit holders.
- Notice required of the potential health impacts of CSOs whenever information from a reliable source indicates that a discharge is occurring or there is a reasonable likelihood that a discharge will occur within the next 24 hours.
- Amends: 327 IAC 5-2-9 and adds 327 IAC 5-2.1
- Helps safeguards the public's health by giving warning to persons who likely may come into contact with waterbodies contacted by combined sewer overflow.



Process

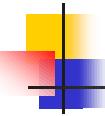
- Workgroup comprised of representatives of CSO communities, the Indiana Association of Cities and Towns, Hoosier Environmental Council and Improving Kids Environment, was formed and began meeting in the summer of 2001.
- The rule was final adopted by the WPCB Jan. 8, 2003 and was signed into law by Governor O'Bannon on April 8, 2003 and became fully effective on May 9, 2003.



- CSO notification procedures
 - Each CSO Community must submit plan to the Commissioner by Nov. 9, 2003 and fully implement the plan no later than 90 days after the submission.
 - A CSO community must incorporate the CSO notification procedures into its CSO operational plan.
 - Determine the affected waters and provide locations of:
 - CSO outfalls,
 - public access points including boat launches and bridges located on affected waters and parks,
 - school yards,
 - parkways, and
 - greenways on or adjacent to affected waters.
 - drinking water suppliers having surface water intakes located within 10 river miles downstream of each CSO outfall within the community's jurisdiction.



- CSO notification methods
 - Place public notice in the newspaper of general circulation in March of each year.
 - Contact potential media sources such as newspapers, television or radio that may be interested in receiving notification.
 - Identify possible affected public such as environmental advocacy groups, recreational user groups, or community groups in the community that may be interested in receiving notification.
 - Rule provides example wording for signage to be placed at access points.
 - Provide a list of private property access points or access points outside a community's jurisdiction where offers to provide signage will be made.
 - Notice must be provided when a CSO discharge is occurring or is imminent based on predicted or actual precipitation or a related event.



Updates on 2003 Legislation

HEA 1671: Permit Renewals

HEA 1221: NPDES Variances



NPDES Variance Amendment

- HEA 1221-2003 amended IC 13-14-8-9, the statute that allows for a variance from a water quality standard in a NPDES permit.
- Amendment brings Indiana NPDES variance law into conformity with federal law.
- Indiana is currently required to use the federal variance language to issue variances in the Great Lakes Basin.
- EPA disapproved part of Indiana's GLI rules that dealt with variances and required Indiana to use the federal variance language.
- IDEM will work with the Water Board as part of "Triennial Review" to incorporate the revised statutory variance requirements into our rules.